CLAIMS

What is claimed is:

1. A method of recording data on an optical storage medium in a certain recording format, the method comprising:

selecting a recording format from a plurality of recording formats to record the data on the optical storage medium;

recording the data on the optical storage medium in the selected recording format; and

adding information regarding the selected one of the plurality of recording formats on the optical storage medium.

2. The method of claim 1, wherein the selected recording format to record the data is selected by a user.

3. The method of claim 1, wherein the recording format information is recorded in an area adjacent an area in which the data is recorded.

4. A method of recording data on an optical storage medium in a plurality of recording formats, the method comprising:

selecting one of the plurality of recording formats for each of the corresponding data to record each of the data on the optical storage medium;

recording each of the data on the optical storage medium in the corresponding selected recording formats; and

adding information regarding the selected recording format on the optical storage medium whenever each data is recorded in the corresponding one of the selected recording formats.

5. The method of claim 4, wherein the selected recording format corresponding to each of the data is selected by a user.

6. The method of claim 4, wherein the recording format information is recorded in an area adjacent each area in which the data is recorded.

7. The method of claim 4, further comprising, after completion of the data recording, preparing and recording file systems.

8. The method of claim 7, wherein the file system is prepared and recorded every time new data is recorded on the optical storage medium.

9. The method of claim 7, wherein the file system is prepared and recorded after completing recording of the data in an entire data area of the optical storage medium.

10. The method of claim 8, wherein:

the file system comprises directories for the respective recording formats,

each of the directories comprises information regarding attributes of each of the data in the corresponding recording format, and

the attribute information includes a data file name, recording format information, and a starting address.

11. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 1, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

12. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 7, the method comprising:

reading data for a file system from the optical storage medium;

reading a recording format information distinguished from a plurality of recording format information and a starting address of corresponding desired data from the file system; and

reading the desired data from the corresponding starting address and decoding the desired data based on the corresponding recording format information.

13. An optical disc recording apparatus which records data in a certain recording format on an optical storage medium, the apparatus comprising:

a codec which compresses/encodes an input data signal in one of various recording formats to produce an encoded data signal, the codec being able to compress/encode the input data signal in each of the various recording formats;

a digital signal processor (DSP) which receives the encoded data signal and performs a predetermined modulation on the encoded data signal;

an amplifier which amplifies the modulated data signal to produce an amplified data signal;

a pickup which generates a beam and records the amplified data on the optical storage medium in response to the amplified data signal;

a servo which performs a servo control on the pickup according to a servo control signal; and

a controller which receives a recording format selected by a user from the various recording formats through a user interface and informs the codec and the DSP of the selected one of the recording formats so as to record the data in the selected recording format and to provide a servo control signal.

14. The apparatus of claim 13, wherein after the recording of the data in the selected recording format, the controller records information regarding the selected recording format to be recorded on the optical storage medium.

15. The apparatus of claim 13, wherein the controller receives a selected recording format through a user interface whenever data is recorded.

16. An optical disc reproducing apparatus which reproduces data from an optical storage medium on which data is recorded in various recording formats, the apparatus comprising:

a pickup which emits a beam on the optical storage medium and outputs a data signal;

an amplifier which amplifies the data signal;

a digital signal processor (DSP) which receives the amplified data signal and performs a predetermined demodulation on the amplified data signal;

a codec which decompresses/decodes the demodulated data signal in various recording formats;

a servo which performs a servo control on the pickup according to a servo control signal; and

a controller which reads a recording format information corresponding to a desired one of the data from the optical storage medium and informs the codec and the DSP of the recording format information so as to reproduce the desired data recorded in a corresponding one of the recording formats, and to produce the servo control signal.

17. An optical storage medium comprising:

an area on which data is recorded in a certain recording format; and

recording format information is recorded in an area adjacent the area containing the data and which is used by a reproducing apparatus to distinguish the certain recording format from a plurality of recording formats corresponding to the data recorded on the optical storage medium.

18. An optical storage medium comprising:

an area on which a plurality of data are recorded in various corresponding recording formats; and

a predetermined area in which file system information is recorded,

wherein the file system information includes information regarding recording formats and starting addresses of the data.

19. The method of claim 9, wherein:

the file system comprises directories for the respective recording formats,

each of the directories comprises information regarding attributes of each of the data in the corresponding recording format, and

the attribute information includes a data file name, recording format information, and a starting address.

20. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 2, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

21. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 3, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

22. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 4, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

23. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 5, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

24. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 6, the method comprising:

reading recording format information regarding desired data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the desired data based on the read recording format information.

25. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 8, the method comprising:

reading data for a file system from the optical storage medium;

reading a recording format information distinguished from a plurality of recording format information and a starting address of corresponding desired data from the file system; and

reading the desired data from the corresponding starting address and decoding the desired data based on the corresponding recording format information.

26. A method of reproducing data from an optical storage medium in which data is recorded using a method of claim 9, the method comprising:

reading data for a file system from the optical storage medium;

reading a recording format information distinguished from a plurality of recording format information and a starting address of corresponding desired data from the file system; and

reading the desired data from the corresponding starting address and decoding the desired data based on the corresponding recording format information.

27. The apparatus of claim 14, wherein the controller receives a selected recording format through a user interface whenever data is recorded.

28. An optical apparatus that transfers data with respect to an optical storage medium, the apparatus comprising:

a pickup that optically transfers encoded data with respect to the optical storage medium;

a data converter which converts a received one of the encoded data and the data into the other one of the encoded data and the data according to a determined one of a plurality of different recording formats; and

a controller which determines a recording format selected from a plurality of different recording formats and which corresponds to a selected one of the data, controls the data converter to convert the received one of the encoded data and the data according to the determined one of the plurality of different recording formats, and controls the pickup to optically transfer the encoded data.

29. The optical apparatus of claim 28, wherein the controller controls the pickup to transfer recording format information regarding the determined recording format with respect to a first region of the optical storage medium, and controls the pickup to transfer the selected data with respect to a second region of the optical storage medium other than the first region.

30. The optical apparatus of claim 29, wherein the first region has a common border with the second region.

31. The optical apparatus of claim 29, wherein the first region includes another recording format information regarding another one of the plurality of different recording formats, and the second region has other data encoded in the another one of the plurality of different recording formats.

32. The optical apparatus of claim 28, wherein the controller further determines another recording format from the plurality of different recording formats and which corresponds to a selected another one of the data from the optical storage medium, and controls the converter to convert the received one of the selected another data and the encoded data according to the determined another one of the plurality of different recording formats.

33. The optical apparatus of claim 32, wherein the controller controls the pickup to transfer the recording format information with respect to a first region of the optical storage medium, controls the pickup to transfer the selected data with respect to a second region of the optical storage medium other than the first region, controls the pickup to transfer another recording format information regarding the determined another recording format with respect to a third region of the optical storage medium, and controls the pickup to transfer the selected another data with respect to a fourth region of the optical storage medium other than the third region.

34. The optical apparatus of claim 33, wherein the first region has a common border with the second region, and the third region has a common border with the fourth region.

35. The optical apparatus of claim 33, wherein the first region includes the third region, and the second region includes the fourth region.

36. The optical apparatus of claim 28, wherein the plurality of different recording formats includes recording formats for at least two of digital versatile disk (DVD) data, MP3 data, video CD (VCD) data, MPEG4 data, video recording (VR) data, MPEG2 data, audio compression 3 (AC3) data, and linear pulse code modulation (LPCM) data.

37. The optical apparatus of claim 28, wherein:

the data converter comprises a decoder which decodes the encoded data read from the optical storage medium into the data according to the determined one of the plurality of different recording formats; and

the controller reads recording format information corresponding to the selected one of the data from the optical storage medium to determine the one the plurality of different recording formats, and controls the decoder to decode the encoded data to provide the selected data in the determined one of the plurality of different recording formats.

38. The optical apparatus of claim 37, wherein the controller reads a file system from the optical storage medium in which the determined recording format information is stored in order to read the recording format information.

39. The optical apparatus of claim 38, wherein the file system further comprises another recording format information corresponding to another one of the data encoded using another one of the plurality of different formats.

40. The optical apparatus of claim 28, wherein:

the data converter comprises an encoder which encodes the data into the encoded data to be written to the optical storage medium according to the determined one of the plurality of different recording formats; and

the controller controls the encoder to encode the selected one of the data in the determined one of the plurality of different recording formats, and controls the pickup to record recording format information regarding the determined recording format and the encoded data on the optical storage medium.

41. The optical apparatus of claim 40, further comprising a user interface through which a command is received to determine the one of the plurality of different recording formats for use in encoding the selected one of the data.

42. The optical apparatus of claim 40, wherein the controller further prepares a file system in which the determined recording format information is stored and controls the pickup to record the prepared file system.

43. The optical apparatus of claim 42, wherein the file system further comprises another recording format information corresponding to another one of the data encoded using another one of the plurality of different formats.

44. A computer readable medium encoded with processing instructions for implementing a method of recording data on an optical storage medium in a recording format performed by a computer, the method comprising:

selecting a recording format from a plurality of recording formats to record the data on the optical storage medium;

recording the data on the optical storage medium in the selected recording format; and

adding recording format information regarding the selected one of the plurality of recording formats on the optical storage medium.

45. The computer readable medium of claim 44, wherein the method further comprises receiving a user selection from a user to select the selected one recording format.

46. The computer readable medium of claim 44, wherein the recording format information is recorded in an area adjacent an area in which the data is recorded.

47. The computer readable medium of claim 44, wherein the method further comprises:

selecting another one of the plurality of recording formats for additional data to be recorded on the optical storage medium;

recording the additional data on the optical storage medium in the corresponding another selected recording format; and

adding additional recording format information regarding the another selected recording format on the optical storage medium.

48. The computer readable medium of claim 47, wherein the method further comprises, after the data and the additional data area recorded, preparing and recording on the optical storage medium a file system including the recording format information and the additional recording format information.

49. A computer readable medium encoded with processing instructions for implementing a method of reproducing data from an optical storage medium performed by a computer, the method comprising:

reading recording format information regarding selected data from an information area of the optical storage medium distinguished from a plurality of recording format information; and

reproducing the selected data based on the read recording format information.

50. The computer readable medium of claim 49, wherein:

the reading the recording format information comprises:

reading a file system from the optical storage medium, the file system having files for a plurality of different recording information for corresponding different recording formats, and

reading the recording format information distinguished from the plurality of recording format information and a starting address corresponding to the selected data from the file system; and

the reproducing the selected data comprises reading the selected data from the corresponding starting address and decoding the selected data based on the corresponding recording format information.

51. A method of transferring data with respect to an optical storage medium comprising:

converting a received one of the data and encoded data to the other one of the data and the encoded data using a first recording format; and

transferring the encoded data with respect to the optical storage medium,

wherein the first recording format is independent of a type of the optical storage medium on which the encoded data is recorded.

52. The method of claim 51, wherein the optical storage medium is of the type having a second recording format not compatible with the first recording format.

53. The method of claim 51, wherein:

the converting the received one of the data and the encoded data comprises encoding the data in the first recording format, and

the transferring the encoded data comprises recording the encoded data on the optical storage medium,

wherein the optical storage medium is of the type having a second recording format not compatible with the first recording format.

54. The method of claim 51, wherein:

the converting the received one of the data and the encoded data comprises decoding the encoded data from the first recording format, and

the transferring the encoded data comprises reading the encoded data from the optical storage medium,

wherein the optical storage medium is of the type having a second recording format not compatible with the first recording format.